



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

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Project Title The Cutting Edge, Smells Fishy to Me: Analysis of Different Cooking Oils Used to Run a Lawn Edger	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our experiment was to strain used cooking oils through a filter that we built and then determine and analyze which one would run a lawn edger the longest. We thought that it would be the Wesson Pure Corn Oil.</p> <p>Methods/Materials The only variable in our experiment was the type of cooking oil. We used: Corn, Vegetable, Peanut, Canola, Olive, and Safflower Oils. Each oil was tested (4) four times, for a total of (24) twenty-four experiments. French fries and fish sticks were cooked and the oil strained through a filter that we made. We timed how long the lawn edger ran on (100) one hundred ml. of filtered oil. We controlled: brand and amount of food, cooking and cooling times, amount of oil, and the outside temperature. We always used a new filter, new spark plug, and a gas cleaned lawn edger for each experiment.</p> <p>Results Our filter worked well and we were able to run the lawn edger on used cooking oil. The (6) six oils that we used in our experiment in the final ranking order, from the best to the worst were: (1st) Crisco Pure Canola Oil, (2nd) Hollywood Enriched Expeller Pressed Safflower Oil, (3rd) Crisco Pure Vegetable Oil, (4th) Wesson Pure Corn Oil, (5th) Bertolli Classico 100% Pure Olive Oil, and (6th) Hollywood Enriched Gold Peanut Oil. The Hollywood Enriched Gold Peanut Oil failed to ever run the lawn edger.</p> <p>Conclusions/Discussion Our hypothesis was that the Wesson Pure Corn Oil would run the edger the longest, but the Crisco Pure Canola oil was the best fuel. It was the only oil that had to run out of fuel in order to stop the lawn edger from running. Our analysis showed that there is a correlation between the amount of saturated fat in the oil and the running time. We determined that not all of the saturated fat bonds were broken down during cooking and that this caused them to foul the spark plug.</p>	
Summary Statement Our project was to determine what used cooking oil would run a lawn edger the longest after it had been strained through a filter that we built, and analysis the differences.	
Help Received My Mom drove us to do our research. Joaquin's Mom bought most of our supplies. Mr. Gottlieb disposed of the cooking oil. Paige Auto disposed of the used spark plugs.	